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Post-It* Fax Note	7671	Date	# of pages 2
To	Mary Kay Voytilla	From	Mike Thomas
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Dear Jerry:

The purpose of this letter is to provide you with my comments relative to a memorandum entitled "Bunker Hill Long-Term Water Management - Results of CH2M HILL Scoping Session" authored by Mary Kay Voytilla of USEPA on June 1, 1998. My comments are noted below.

1. Page 3, "Main Areas Identified for Evaluation" I suggest that two new topics be added to this list: a) identify methods of metal recovery where sale of the recovered metals meets or exceeds recovery costs; b) identify alternative discharge (or pumpage) pathways from the mine other than the Kellogg Tunnel. These two topics are discussed in the following paragraphs.

- The document as presented does not include detailed consideration of using the acid mine drainage as a mineral resource. Research conducted by Dr. Betric Pesic, of the University of Idaho, indicates that metal recovery from the mine water can be a viable business venture. In this event, one of the focuses of underground hydrogeologic studies may be to separate good and poor quality water within the mine to enhance metal recovery.
- The document does not address creation of a additional discharge pathways from the underground workings for both economic and safety reasons. The Kellogg Tunnel historically has required a high maintenance program. The heavily timbered portion of the tunnel passes through a several major northwest-southeast trending faults. Maintenance of the tunnel while the mine was operating was possible because of the available equipment and alternative mine access points. Maintenance of the tunnel after all underground operations have ceased would require staffing and equipment that would be a significant financial drain. Also, a collapse of the Kellogg Tunnel would cause ponding of acid water. The ponded water would create major safety and environmental problems if not addressed immediately. Consideration should be given to creation of one or more new mine

water discharge points. Two alternatives are: a) construction of well(s) to facilitate mine water discharge under either pumping for flowing conditions; and b) use of the Crescent Mine as a mine water pumpage site. Both alternatives would change the location of the treatment/metal recovery plant. A Crescent Mine pumping system could significantly improve the quality of mine water discharge.

2. Page 3, "Technical Approaches" Two additional sections would need to be added to address the points raised under comment #1.

3. Page 4, "Reducing Water and Air Flow Into the Mine Workings and Into the Major AMD Producing Areas" Water measurement stations would need to be established in addition to those described in the section entitled "Identify Highest AMD Producing Areas". The purpose of the measurement stations would be to quantify the benefits associated with different water diversion plans.

4. Page 5, "Evaluate the Potential Effectiveness, Feasibility and Risks of Mine Plugging . . ." Consideration should be given to disposal of treatment plant sludge in the upper portion of the mine to both reduce water movement and to decrease creation of acid mine water. A treatment plant sludge could be created to have specific hydraulic and chemical properties. ~~Alternative mechanisms for placement of the sludge within the mine~~ would need to be explored.

5. Page 6, "In-Mine Water Storage Capacity" Construction of a well(s) for mine water discharge would increase the feasibility of using the mine for water storage. The well(s) could be constructed to intercept mine workings several hundred feet below the 9 level. The use of a Crescent Mine pumpage system could achieve the same goal.

I do not have specific comments on any of the three Attachments. General comments that pertain to the attachments are noted above. Please contact me if you have questions relative to this letter. Thank you.

Sincerely,

Dale R. Ralston